Claims

1. Nanocomposite blends containing
a) polyamide (PA) from 55 to 95% by wt.,
b) polypropylene (PP) from 4 to 40% by wt.,
c) nanodisperse phyllosilicates from 1 to 9% by wt.
d) carboxylated polyolefins, especially copolymers of ethylene with unsaturated carboxylic acids, up to 10% by wt.,
that may contain common stabilizers and fillers in addition to this composition of 100% by wt. total.

2. The polymer nanocomposite blends according to claim 1 wherein component a) is a polyamide 6 with a solution viscosity from 2.2 to 4.0,
preferably from 2.4 to 3.5.

3. The polymer nanocomposite blends according to claim 1 or 2 wherein component b) is a polypropylene with a melt-flow index from 1 to 110, preferably from 5 to 30 ccm/10 min (230°C/2.16 kg).

4. The polymer nanocomposite blends according to one or several of claims 1 to 3 wherein the nanodisperse phyllosilicate (component c) is a natural sodium montmorillonite, hectorite, bentonite, or synthetic mica modified with onium ions and having a cation exchange capacity 60 to 150 mval/100g.

5. The polymer nanocomposite blends according to one or several of claims 1 to 4 wherein component d) is

contained in the nanocomposite blends at 0.1 to 1.9% by wt. and preferably is an ethylene acrylic acid copolymer or an ethylene methacrylic acid copolymer that is partly or fully neutralized with metal ions.

6. A method for producing polymer nanocomposite blends wherein the components contain
a) polyamide (PA) from 55 to 95% by wt.,
b) polypropylene (PP) from 4 to 40% by wt.,
c) nanodisperse phyllosilicates from 1 to 9% by wt.
d) carboxylated polyolefins, especially copolymers of ethylene with unsaturated carboxylic acids, up to 10% by wt.,
that may contain common stabilizers and fillers in addition to this composition of 100% by wt. total and are compounded at temperatures above the melting points of the polymers involved in an extruder or kneader.

7. The method according to claim 6 wherein the components are compounded in one step.

8. The method according to claim 6 wherein components c) and d) are first worked into parts of component a) to form a master batch which is compounded in a second step with component b) and the remaining quantity of component a) and then processed further.

9. The method according to claim 6 wherein components d) and b) are first compounded in an extruder or

kneader at temperatures above the melting points of the polymers involved and component c) and a part of component a) are worked in to produce a master batch which in a next step is compounded with the modified polypropylene and the remaining quantity of component a) and then processed further.

10. The method according to claim 6 wherein components d) and b) are compounded in an extruder or kneader at temperatures above the melting points of the polymers involved to become a modified polypropylene and in a next step this modified polypropylene compounded with component a) and component d) and then processed further.

11. Use of the nanocomposite blends according to any one of claims 1 to 5, produced according to one of claims 6 to 10, as extrudates, injection-molded parts, or fibers.